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ABSTRACT

This paper outlines and examines the implications of the main points of the national framework for flexible delivery of vocational education in Australia's technical and further education (TAFE) colleges. Endorsed by the National TAFE Chief Executives Committee in 1992, the framework establishes specific plans of action to be achieved by 1995. The rationale for and definition of flexible delivery of vocational education are presented, and its implications for TAFE and public and private providers are considered. Discussed next are potential benefits and drawbacks of the following flexible delivery modes and venues: self-paced learning, resource-based learning, technology-enhanced learning, home-based learning, work-based training, and learning centers. The roles of administrators, teachers, and students in each mode/venue are also examined. Following this are the main features, rationale for, and general concerns associated with flexible entry and exit points and flexible assessment (including provisions for recognizing prior learning). Next, several questions and concerns regarding flexible modes and venues are considered, and guidelines are presented for developing flexible and modularized curricula. Effective individualized instruction is a way of accommodating different learning styles, personalities, physiological constraints, disabilities, motivation levels, and cognitive abilities. Contains 79 references. (MN)

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ED 380 539

Flexible delivery

JOSIE MISKO

Will a client focus system mean better learning?

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JOSIE MISKO

Will a client focus system mean better learning?

Adelaide 1994

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Introduction

Flexible delivery is a client-focussed approach to the delivery of education and training services by TAFE. It might be seen as part of the TAFE system's contribution to the process of reforming Australia's industries and services to improve Australia's international competitiveness.

Australia's external balance of payments is almost always a matter of close consideration by Australian governments but if international commodity prices decline sharply in real terms, as they did in the early 1980s, this concern becomes acute. The traditional Australian response has been to contract economic activity within Australia to reduce demand for imports, and to increase protectionist measures to make imports more expensive. This approach began to change in the 1970s. Since the 1980s there has been a strong, sustained and substantially bipartisan approach of promoting micro-economic reform and reducing protection.

To become more internationally competitive, Australia must not only improve the efficiency of Australian industries directly involved in export or import substitution trade, but also the government and business operations upon which those industries depend. To achieve such improvements in efficiency, it is also necessary to improve the skills and adaptability of the Australian workforce so that Australian workers produce quality goods and services competitively. The need for such improvements in skills and adaptability pose a challenge to Australia's education and training systems, to provide education and training services that effectively meet the needs of their industry and individual clients.

These developments form the social and economic backdrop of a national effort to meet the skill requirements of young people, industry and Australian society. This effort is drawn together under the National Training Reform Agenda.

The agenda promotes a number of reforms which have direct significance for the way vocational education is to be delivered in TAFE. These reforms include the opening up of the training market to private providers, development of nationally consistent standards, provision of access to training, demonstration of competence to measure individual performance, increased linkages and networking between TAFE, school systems and industry, a national framework for the recognition of training, and an integrated national entry level training system.

Opening up the vocational education training market will increase competition for clients. This represents a potential threat from the private providers to the dominant position held by TAFE. One way for TAFE to ensure that it maintains its dominant role is to become more aggressive and entrepreneurial in marketing courses and attracting clients. A more aggressive TAFE also has implications for the survival

of private providers who in turn must safeguard their existing niches or look for others. With all players trying to safeguard or improve positions the way they go about delivering becomes very important.

One way for all parties to improve market share is to adopt a client focus. This requires assessing client expectations and working to meet these expectations. This is exactly how TAFE has chosen to respond to the challenges that have been laid down. To develop the client focus TAFE has chosen to implement a system for the flexible delivery of training.

Flexible delivery: A client-focussed approach

What is flexible delivery?

Flexible delivery is an open approach to the delivery of vocational education and training. It allows for the adoption of a variety of learning strategies.

These learning strategies may include:

- competency-based learning
- discovery learning
- self-paced learning
- resource-based learning
- self-based learning
- group-paced learning where appropriate
- mixed mode learning (e.g. mixed face-to-face and distance mode, including fleximode)
- integrated theory and practical learning
- integrated on-the-job and off-the-job learning
- problem-based learning.

These terms are not mutually exclusive and tend to overlap. The flexible delivery strategies they describe, however, are promoted as ways to help training systems to become more customer driven, to increase co-operation with industry and to respond more quickly to client needs.

As well as adapting delivery methods to suit client needs the flexible delivery approach promotes a number of other strategies. These include the assessment of prior learning, assessment on demand, open entry and exit points and flexible arrangements of course components (Flexible Delivery Working Party (FDWP) 1992).

Flexible delivery then is concerned with making sure that organisations like TAFE modify their structures to deliver quality learning. It signals an intention to democratise the vocational education sector so that all learners regardless of race, handicap, ability, domicile, previous experience, present occupational situation, and preference for learning styles have access to learning in situations which suit their needs.

This paper adopts the FDWP definition of flexible delivery as a method for providing students with greater flexibility in:

- delivery modes (self-paced, resource-based and technology enhanced)
- delivery venues (home, workplace, resource centre), and
- assessment practices (recognition of prior learning, assessment on demand, work-based assessment, self assessment, peer assessment etc.).

Why flexible delivery?

As has already been stated, flexible delivery is the means by which TAFE and other vocational education providers can develop a client focus to improve their market share. It also represents a pedagogical philosophy based on the assumption that learning will improve if it is tailored to the way students prefer to learn. It reflects a social justice philosophy which supports the rights of all members of society to have accessible quality training. Furthermore flexible delivery aims to help students develop the technological, organisational and interpersonal skills to become effective members of a flexible and adaptable workforce.

Flexible delivery reflects an acceptance of the importance of adopting a client focus. Adopting a client focus has also been one of the main principles of the 'quality' movement—a management approach which aims to increase productivity and profits in business and industry. It is based on the assumption that if client expectations are properly identified they can guide the improvement of work processes and allocation of resources. Meeting client expectations will maintain clients and increase profits. Flexible delivery represents this push for quality in vocational education. Flexibility in the way vocational education and training is delivered is one approach to improving this client focus.

Implications for TAFE and vocational education providers

Management issues

Adopting a client focus rather than a system focus represents a major culture change for TAFE and other providers. Moving from a "what we can provide" approach to a "what would you like us to provide" approach will require dramatic changes to the way training is delivered.

Flexible delivery has the potential for revolutionising the way TAFE works with industry to identify skills and deliver training. It will dramatically change the way teachers and support staff advise, support and assess students. It will influence the procedures administrators use to process records, and the way students approach learning. If such changes are not handled sensitively they may produce instability and confusion among all people concerned. Expecting people to adopt new ways of organising working without including them in decision making processes about such changes can lead to dissatisfaction among staff. This will then affect the implementation process. Ways need to be developed to ensure that staff are not threatened by innovation and can help to come up with ways which will help make the implementation of change smooth and painless as possible.

Implementing change requires adequate planning. If plans are not made to assess needs and build up support then the implementation process will suffer.

Costs

Developing systems which are able to cater for a wider client base and which are technology and resource intensive will require major financial commitment. The costs of purchasing and developing adequate computer-based administrative systems to maintain and update academic, financial and administrative records will be substantial. The hiring and/or training of teaching, technical and support staff will also entail major costs. Furthermore the costs of developing curricula, producing materials, modifying and establishing facilities and purchasing equipment will also need to be considered. These costs can be quite prohibitive unless effective budgetting strategies based on accurate forecasting are put in place. Such strategies will need to be based on a thorough assessment of college, industry and community needs. They will also need to make provision for costs in terms of what is valued as well as what is required to put programs into place. Arrangements will need to be made to analyse and evaluate costs on a continual basis. A computer based cost-benefit analysis technique has been developed for this purpose by the Flexible Delivery Working Party (1993a).

Teaching staff

Initiating any change requires major investment of time in preparing and training staff to accept and implement the change. If this is not taken then the climate at the grass roots will undermine the success of the initiative at the level where it matters most. Should teachers believe that the process makes too much of an imposition with very few returns, then they may either go through the motions of implementing flexible delivery without commitment, or sabotage the program by continuing to teach in the way they always have done.

Flexible delivery will alter traditional relationships between teachers and students. More teacher time will be spent in designing courses, preparing materials, negotiating work contracts with students, monitoring student progress, testing for competence, giving feedback and keeping records than in face-to-face teaching. As a rule teachers have always felt that their work satisfaction comes from the knowledge that they have contributed to student learning in major ways (Lortie, 1975). As students take more responsibility for their own learning, traditional forms of satisfaction for teachers will be diminished. This may damage the motivation and morale of the teaching staff unless they are able to find their satisfaction in other areas.

Furthermore should teacher time be taken up more with administrative tasks of keeping records rather than tasks directly related to curriculum and teaching, then the continued implementation of flexible delivery may suffer. A disgruntled, non-committed teaching staff can seriously damage the quality of the training that is offered and as a result dent the image and credibility of the institution. When this happens clients will look elsewhere for training. The institution will take a long time to recover credibility. These issues need to be considered.

Flexible delivery will also raise issues of how performance is to be evaluated. As teachers spend far less time with students in face-to-face situations, performance indicators based on student contact-hours will

need to be reconsidered. If student contact-hours continue to be the indicator of successful performance then flexible delivery courses may not receive the full support required for successful implementation.

Administrative staff

Flexible delivery will also change how institutions process student enrolments and maintain academic records in significant ways. Consequently there will need to be considerable amount of training of administrative staff in the new systems, and in the way they relate to clients. A client-focussed system will require all staff to adopt an appropriate 'service' attitude which is concerned with finding out how best to solve client problems. Because administrative staff are generally the first point of contact for prospective students their 'service' attitude becomes especially important. Training staff to develop or improve this service attitude will be an added consideration.

Flexible delivery aims to improve access to training for greater numbers of formerly disadvantaged populations. Ultimately its success will depend on how well it can help these groups achieve access and develop those skills which will lead to jobs.

Customisation versus standardisation

One of the basic issues TAFE and other vocational education providers may have to resolve is the question of a trade-off between customisation versus standardisation. Already there is both a tradition of fee for service customised programs, as well as broadly based standard courses that carry credit and credentials. There is no reason why both cannot coexist in a system of flexible delivery. Developing specialisations in certain areas can be one way to achieve the right balance.

A more client-focussed system costs money. Whether it is worth overhauling an entire system and one which has already been perceived as providing effective forms of training for a great number of clients (Dawe 1993) will depend on a thorough and ongoing evaluation of programs where flexible delivery is currently being offered. A comparison of costs against tangible and intangible benefits achieved under this system and more traditional methods needs also to be made. This will help to shape a uniform set of performance indicators which as much as possible are more outcomes focussed and on balance do not tend to be dependent on delivery systems. Indicators should be fair to a range of delivery systems and approaches.

Special implications for private providers of vocational education

If TAFE is effective in encroaching on territories where other providers have been operating in the past the potential exists for private providers to be forced out of business. Private provider courses can now be accredited under the National Framework for the Recognition of Training (NFROT). This potential diminishes their vulnerability to being swamped by a predatory TAFE. However, they too will need to be on

the look-out for better and more affordable ways to meet client needs or look for more ways to work with TAFE to deliver quality programs.

Private providers may also be enabled to respond to changing industry needs by their ability to change how they go about meeting these needs quickly. Their size will make flexibility easier.

The flexible delivery framework

In November 1992 the National TAFE Chief Executives Committee endorsed the document *Flexible delivery: A national framework for implementation in TAFE (FDWP 1992)*. The framework has established specific plans of action to be achieved by 1995. Their achievement, whether it be in 1995 or at a later date, rests on the willingness and ability of local college directors to commit required resources for:

- the adequate training of all staff to implement the changes
- the development of suitable programs and materials
- the purchase of appropriate administrative systems and technologies, and
- the building of effective links with industry and other providers.

It will also depend on how successful the programs are in developing skills and how well teachers keep up with added workloads. If these things do not happen then flexible delivery as an approach to vocational education and training may remain, at best, a list of romantic but elusive ideals, and at worst, another failed fad.

It is still too early to assess whether these ideas are working or not as many colleges have still to adopt the approaches. Those who have had the approaches in place are still in the process of collecting evidence for evaluation. The Tea Tree Gully campus of Torrens Valley Institute of Vocational Education is presently undergoing an evaluation of its processes.

This paper argues that unless proper supports are put in place, the implementation of a system which places increasing responsibility on the learner and the teacher or trainer may, in fact, further disadvantage learners who have been disadvantaged by traditional methods in the past. That is to say that the new system may hinder rather than help those groups for which it was established. It will also argue that the ideas for flexible delivery may not be achieved unless sufficient resources, training facilities and support services are provided to let it take place.

Flexible delivery modes

What are flexible delivery modes?

Flexible delivery modes are training approaches which are customised to meet client needs. They represent a shift from traditional group-paced, face-to-face lock-step methods of teaching, towards self-paced independent learning. Flexible delivery modes also include resource-based and technology-enhanced activities. This indicates a changed role for students and teachers.

Why have these different modes?

These learning modes have been adopted by TAFE to improve access and equity, develop student independence and improve the quality of learning. They represent an increasing dependence on technology to provide education facilities and to facilitate learning.

Self-paced learning

Self-paced learning is a learning approach where students progress through learning activities at their own pace. It means that rather than passive participation in a lecture situation or lock-step programming students will be encouraged to take a more active and responsible role for their own learning. They will be asked to work more independently using prepared resource materials and publications and to access information and lessons, practical activities and simulated experiences via learning guides, computers, videos, audio cassettes and television. In addition, practical hands-on experience on equipment which is up to date and appropriate for the skill being learnt will be required. Teachers, however, will no longer be required to be the principal dispensers of knowledge and will spend more time preparing materials for self-paced learning, advising students, facilitating learning, assessing students and maintaining records. They may also spend time negotiating learning contracts, helping students with difficulties and suggesting extension or remedial activities. They may experience considerable frustration and loss of power as they lose control of delivery.

Because this represents significant changes to the way students and teachers go about their normal 'work' both need to be trained to be effective in their new roles. Students may need help to work more independently and organise their time to meet deadlines. Teachers need to be trained to develop and deliver instruction which promotes self-paced learning and suits individual students. Both need to be trained to use new forms of technology as well as new ways of using or combining existing technologies.

Self-paced learning has the potential to increase independence and self-reliance for those who have the motivation and ability to organise themselves. It represents an opportunity to mimic the real world and

create the environment which promotes the skills needed for lifelong learning. It may place extra burdens on those who are not self-motivated and disciplined to get tasks completed on time. This raises questions of effectiveness and efficiency. These concerns may only be evident in the short term and may diminish as teachers and students get used to the new way of working. More will be made about this point in the discussion on individualised instruction.

Resource-based learning

Resource-based learning is learning in which students learn from print materials and audio visual technologies. The emphasis here is on students learning from materials rather than listening to teachers. They are ways of developing self-sufficiency in students and keeping up with current developments in industry. They are also methods of improving the quality of learning and communication for students who are separated from teachers in distance and time.

They require students to have the literacy skills for reading the materials and equipment manuals and basic operating skills for working with the various media. These needs in turn require teachers and curriculum designers to develop user-friendly materials (Evans 1991). Materials will need to be pitched neither too far above or below, the level of literacy expected of students in their day to day work. They also require administrators to collect necessary information to ensure that the most effective and cost-efficient technology is purchased for college needs.

Technology-enhanced learning

Technology-enhanced learning is learning which is enriched by the use of computer-based and communication technologies. It includes computer-managed and computer-assisted instruction, computer-based administrative systems, computer networking, television broadcasting, electronic mail, teleconferencing, video conferencing, inter-active video disks, CD ROM. (A more complete list is provided in Mason 1989 and FDWP 1993b.)

Computer-based administrative 'systems'

Advances in technology have streamlined administrative and record keeping functions in all large organisations. In educational institutions computer programs can be used for registration, grading, recording and reporting of results to students. Although most colleges are using this technology there are still many colleges which are not using such technology to its best advantage. A recent national survey of client satisfaction with TAFE found that some students had not received their certificates for quite a while after they had graduated. In addition the data bases of student enrolments and withdrawals were also found to be wanting (Dawe 1993b). If vocational education colleges wish to improve status and credibility then such administrative arrangements need to be put in place. Furthermore administrative staff who will be using these

systems should be regularly, and appropriately trained to be able to do this.

Computer-managed and computer audio visually-assisted instruction

As well as assisting with the management of records, computers along with audio cassettes, television broadcasts and videos can be used in the instructional process itself. Here the material becomes the teacher and the student works individually and at his/her own pace with lessons programmed into a computer system and enhanced by audio cassette, video and other media. Although this model can be used to uphold the philosophy of flexibility we must also recognise that it is not the panacea for better learning. There are some functions that cannot be adequately dealt with. Learning to work with others, developing critical judgement in social situations, and acquiring values can be done better by interaction with other people rather than by interaction with a computer, cassette or video (Chacom 1992).

According to Chacom, working with technology can also be tailored to students' preferred methods of learning. Students who prefer to learn by doing can use word processors for the development of language and procedural skills, and learning a foreign language. Spreadsheets and data base programs can be used to develop problem solving, analytical and procedural skills. Graphic tools can be used to learn presentation and design skills and artistic expression.

Learning via the communication mode allows the student to learn from others by linking him or her up to information banks, electronic mail and computer conferencing facilities. Linking students to information banks can also put them in contact with a vast amount of information on careers, courses at other colleges, and reference materials. Computer and video conferencing and electronic mail can be used to increase dialogue between teachers and students in campus-based courses, and trainers and course participants in industrial in-service courses. They can also be used to help trainers communicate with members of police forces, ambulance brigades, and other organisations who are separated from them in distance or time.

If this technology is to enhance the learning experiences of students then there must be some attempt to improve students' confidence in the use of these materials. This can only come about by timely and appropriate training, and by regular use. This is not to say that all teaching and learning is to be done via technologically-based methods, however. It makes good sense for practitioners to think of the learning outcomes they require before they commit their institutions to funding these forms of communication when a less expensive but just as adequate medium will do the job.

Computer-based learning is especially used for the-training of word processor operators, and clerks who work in the financial services industry. Here computer literacy has become integral to their job. If programs are boring, pointless or time wasting, and not integrated into the culture of the organisation, then they are bound to fail (Laurrilard 1987).

Advances in communications and telecommunications technology, and CD ROM facilities makes possible interaction between teachers and students separated in distance and time, and gives both access to data bases in a variety of fields. What needs to be kept in mind is that technology costs money and should be evaluated according to the benefits it has for learning. However the means of establishing benefits in terms of comparative costs, outcomes and other criteria have yet to be tackled effectively.

How will these changes benefit vocational education?

Management and administrative staff

The task of running an institution like a modern business and working with new technologies and computer systems may present exciting challenges for administrators and administrative staff. They will allow quick and easy access to records and reduce the time taken to maintain and update records.

Students

Learning which is customised to fit individual students' learning rates, learning styles and needs and enriched by resources and technology can ultimately make learning more accessible to a variety of formerly disadvantaged groups. It can develop independence, and prepare students to take their places in a changing workplace by relying on students to organise their time and take charge of their own learning in the hope that these skills will transfer to the workplace.

Transferring the learning activities of students onto computer, television, videos, and audio cassette programs of instruction exposes students to a variety of learning experiences that cannot be provided by one teacher. It frees teachers to deal with those aspects of the curriculum that need to be done on a face-to-face basis (Rogers 1987). In addition there are learning experiences that can be achieved far better through these media than through chalk and talk methods and print-based resources.

Resource-based and technology-enhanced learning has the potential to increase the quality and variety of learning experiences for all students and to free teachers to focus on the tasks associated with giving feedback, providing guidance and monitoring student progress.

Teaching staff

Teachers will have increased opportunities for working more closely with students on a one-to-one basis. They will have more opportunities to have a say in the design, development and purchase of suitable curriculum materials and equipment. They will also be able to diversify their training skills. As a result they may feel that increased satisfaction given the loss of power and responsibility they may experience as students take charge of their own learning (FDWP 1993f). This is not to say that they may not also feel an added sense of control when they can see that students benefit in substantial ways from the guidance and feedback teachers have provided.

What are the concerns that need to be addressed?

Students

Flexible delivery presents major concerns for students, teachers and administrators. For students a basic concern relates to how well they can adapt to situations where they are in charge of their own learning. Self-paced learning may have been set up to cater for differences in learning rates but it also has the potential to inhibit the learning for those students who have problems with motivation and working on their own. Resource-based learning may have been set up to develop independence and self-reliance but it may pose major problems for those students who have literacy problems and require added help.

This poses real challenges for the introduction of flexible delivery. It will need to be introduced in a way and at a rate which will suit individual students.

Teaching staff

There is no doubt that flexible delivery has the potential to dramatically increase the workloads on teachers and support staff at least in the short term. Developing flexible curricula, writing modules, monitoring student progress, and maintaining and updating records will all be labour intensive. If all this added activity is not rewarded either in terms of added benefits or added recognition there may be a problem for TAFE to maintain and attract teachers of high calibre. Alternatively flexible delivery may be introduced in a staged way which limits the *strains* on available staff resources.

Administrators

The major concern for administrators will be the problem of getting everybody on side to give the system a fair go. This will entail a major investment of time and effort into ensuring that all work teams get fair access to resources they require for developing and delivering their programs. If performance indicators for measuring institutional and departmental performance (and even individual performance) do not change to take account of changing ways of delivery, then there may be little incentive for institutional managers to provide the climate for flexible delivery to be implemented successfully and for teachers to implement it.

Administrative staff

For administrative staff, self-paced learning will also present added responsibilities. Keeping up with the technology available, learning new systems for processing records, and keeping track of costs and equipment will occupy a major part of their work. As flexible hours of access to facilities and equipment are made available to students the hours that administrative staff are expected to work will also change. Should staff not be rewarded adequately for changes in their work roles in the form of added benefits or extra support then TAFE runs the risk of losing trained administrative staff to other areas.

Implications for TAFE colleges

The success of this system rests on the availability of materials and equipment and teaching and support staff to support more individualised forms of instruction. This means that adequate resources in terms of funds and staff may be required to develop curricula and produce materials. This will present added workloads for teachers that may be overwhelming if efforts are not made to prevent duplication. Accessing suitable materials which have already been developed is one way of dealing with this problem.

Increased workloads can lead to motivational problems if teachers come to feel that the system is more trouble than it is worth. For this reason it is imperative that there is a gradual phasing in of flexible delivery programs. There also needs to be much thought given to informing staff of impending changes as well as training them to adapt to the new approaches and to work with the new technology.

The development of curricula and materials will require multi-disciplinary work teams. This collaborative approach may affect traditional demarcation lines and present industrial relations problems unless terms and conditions are changed to reflect changes in work roles.

A pre-requisite for resource-based and technology-enhanced learning is that greater amounts of materials and equipment need to be made available to a greater number of people at different times. This will have implications for library services and maintenance, storage and security arrangements. Unless adequate arrangement are made to provide students with easy access to materials, and colleges establish systems for keeping track of these materials then flexible delivery approaches may not be able to deliver the goods.

Colleges will also find themselves asking if it is all worth it in the long run. The offering of programs which are customised to client needs may be a very good marketing tool but if the emphasis on increased self-direction serves to isolate students from teachers and each other, or fails to provide the motivational or time management skills to meet deadlines then the system may fail those very students it was set up to assist. This point will be further elaborated in the discussion on learning styles.

Implications for the TAFE system as a whole

In the long run the system will need to ask whether the costs of a client-focussed system justifies the means. The production of materials, the purchase of communication and computer technology for individualised client instruction costs more. Whether it will increase market share over and above what is enjoyed under more traditional methods will depend on how far it maintains credibility with students, teachers and employers. This in turn will depend on whether the system can deliver the competence required by these groups in the most cost-effective manner.

Furthermore if there are too many problems between states concerning equipment choices and equipment compatibility and if equipment purchase and materials production far outweigh the benefits then efforts to deliver technology-enhanced instruction may well break down.

Flexible delivery also raises the question of curriculum compatibility to promote ready credit transfer. If it is too difficult to transport course credit across borders or institutions then there will be less incentive for institutions to implement the process.

Some policies at the system level may affect the flexibility of the institution to deliver courses in a flexible manner. Insisting that students enrol at the college nearest their home address rather than one convenient to the workplace may inhibit the ability of colleges to delivery close working relationships with nearby firms. These close working relationships are especially important for the integration of on and off-the-job training.

Flexible delivery venues

What are flexible delivery venues?

Flexible delivery venues are venues which allow learning which is traditionally delivered on campus to be accessed from a variety of other locations. These locations are meant to suit learners and other clients of vocational education. They include homes, other campuses, work places and learning centres.

Why have flexible delivery venues?

Flexible delivery venues reflect TAFE's mission to provide learning environments where they are needed. This means that 'TAFE is venturing out of its colleges and into the market place. No longer asking that clients come to the classroom, TAFE is bringing the classroom to the client' (FDWP 1992). This includes encouraging learning to take place in the workplace, learning centre, home or on another campus. This is another means of pursuing quality improvement and access to training for larger numbers of students.

No one could argue with the value of opening up the training system to students who, because of distance, work duties or family commitments, cannot attend courses presented on campus at times which are convenient. What needs to be examined are the mechanisms by which training can be effectively delivered to those different locations and how best to advise and support learners separated from teachers in space or time.

Home-based learning

What is it?

Home-based learning is formal learning which can be undertaken away from the campus. Other terms for this are distance education and external studies. This form of learning has a long tradition in Australia and overseas. These methods have traditionally delivered training through printed materials or tapes with students completing assignments and sending them back to teachers for assessment and feedback. They have tended to cater for students in remote locations or who live in different cities or states from the institution delivering the program. However students who may not live in remote locations may also choose to study via distance education methods because attending on-campus lectures may be inconvenient.

Mixed mode methods combine face-to-face teaching with off-campus study. In 1992 about 160,000 TAFE students were involved in such forms of learning out of a possible population of about one million (NCVER statistics, 1992). The largest single institution provider of distance education is the New South Wales based Open Training and Education Network (OTEN). In that state it is a chief player working in partnership with the various colleges in the delivery of mixed mode

courses and a central system for the production of materials. It employs teachers, instructional designers, editors, graphic illustrators and distribution managers. This arrangement provides a useful model for course and materials development suitable for flexible delivery. Some other states and territories have similar centralised approaches; others are more decentralised.

General concerns

As a rule distance or mixed mode education is forced on students who do not live close to learning institutions. Flexible delivery makes this form of education also available to metropolitan students who are unable or unwilling to attend classes or who want to get access to better learning resources. Opening up opportunities for students to choose where they study needs also to be examined with respect to how effective off-campus, or a combination of off and on campus study is in promoting learning.

Fleximode programs use a form of mixed mode learning. A comparison of Fleximode programs in Australian TAFE colleges (Toussaint 1990) found that although there were no advantages in terms of retention rates or exam results, some students liked the fact that there was less or varied class attendance. The principal disadvantages were that students needed to be more organised and self-disciplined. They also had to find enough time to do their studies.

Although many of the students enjoyed using the approach, the majority also felt that the most effective way to learn was from a 'teacher in class' or from 'tutorial and class discussions'. They felt that studying independently was the least effective. Although the findings of this study need to be evaluated in terms of the courses that were targetted and the students within the courses, we can say that students feel that feedback through contact with other students and teachers needs to be an integral part of a study program. An investigation of Australian tertiary students' evaluations of their courses (Ramsden 1992) found that students consistently rated as good those courses where teaching staff gave students helpful feedback. Teachers in the 'good' courses made real efforts to understand student difficulties, and put a lot of time into commenting on student's work.

In an evaluation of the Swedish distance education system (Willen 1981) concluded that students were bound to fail if they were not given the necessary personal contact which would give them a feeling of security in what they were doing. Surveys of students in the British Open University courses also highlight the special need for tutorial contact (Kelly 1987). Taken together these findings suggest that some form of face-to-face contact with teachers or tutors and other students needs to be included in any program to provide students with explanations of concepts, guidance, sense of security, assistance and motivation.

Advances in modern telecommunications makes it possible for individuals, students, teachers and groups of students to communicate

with each other through video and audio conferencing, fax, electronic mail and interactive video. If we are to learn lessons from what students in home based or mixed mode programs are saying we must ensure that face-to-face contact is protected in some ways. Already some attempts have been made to integrate distance methods with interactive television, DUCT telephone systems, and personalised videos to ensure that face-to-face contact is part of the feedback process. These will need to be continued under a system of flexible delivery.

Work-based training

What is it?

Work-based training is training that is conducted at the workplace. Traditionally it has been run by the companies themselves and has taken the form of off-the-job or on-the-job training. Off-the-job training has been generally delivered in traditional classroom-based face-to-face style by in-house training officers, external consultants including TAFE, and other providers, or internal personnel who have been trained to deliver special courses. On-the-job training has been delivered at the work-station by supervisors or other employees charged with training new employees in work processes or on machinery required to do the job. Although the types of training activities may be recognised within the company it has generally not been recognised externally.

TAFE/Industry collaboration

Flexible delivery will allow TAFE programs to be presented at these venues and will make it possible for approved company training to be formally assessed and recognised through the national framework for the recognition of training (NFROT). It will require a strengthening of the collaboration between TAFE and industry to help industry to develop and deliver courses and assess performance. It will also require increased consultation between industry and TAFE to ensure that the courses that are delivered by TAFE are based on the skill requirements of industry, and closer links between unions, ITABs and employers to work out industrial relations obligations.

Examples from Australia

According to the Flexible Delivery Working Party (1993c) there are signs that collaborative arrangements between TAFE, university and private providers and industry are already happening. Outer Eastern College of TAFE in Melbourne is working with NEC to deliver Engineering and English as a Second Language (ESL) courses and credentials, and with Motorola to deliver literacy and numeracy courses. Edith Cowan University and the West Australian Police Force are collaborating to bring programs to remote and rural police officers. Here satellite delivery, videotapes and E-mail facilities are used to present programs, records practical assessments and return assignments. The Queensland Rural Industry Council in collaboration with University of Queensland Gatton College, a number of TAFE colleges, the Queensland Department of Primary Industry and private providers, have developed and delivered one-day workshop programs to rural areas in the field of Agricultural Chemical Application and Safety. A TAFE network project has been developed to set up a modular curriculum to meet the needs of

the restructured Metal Industry Award. This program is being delivered using not only TAFE's traditional methods, but also workplace delivery using workplace trainers and other methods.

Already similar projects are being mounted in the Australian context. For example ICI-Botany and New South Wales TAFE are working together to deliver programs for electrical and instrument trades persons (Devlin and Seary 1989, Dutneall 1992). Qantas Airways and Regency College of TAFE in South Australia are collaborating to provide accredited training (Casey 1992).

Enterprise agreements in companies like Taubmans Yeronga, Ford Australia, and BF Goodrich Chemical Altona Plant Maintenance provide support for the introduction of accredited workplace training. Self paced learning arrangements have been agreed to by companies like Van Leer Australia Industrial Containers Business Unit (Seven Hills), Dow Chemicals, Incitec Gisbon Island Granulation and Nitrogen Plant Operators (Department of Industrial Relations 1993).

Such collaboration can only serve to strengthen the credibility of industry training, and its availability in remote locations. If employees know that attending training will be rewarded by externally recognised certificates or awards they will be more likely to view training in a positive light and to take the time to attend the training that is offered.

Examples from Britain

These outcomes have been already obtained by a number of British companies who have adopted training which leads to formal qualifications. These firms have found that allowing employees without any prior formal qualifications to take advantage of workplace training to gain such qualifications has had a number of benefits. Morale has increased. This has resulted in increased productivity, and reduced staff turnover and rejection rates. These projects started up as pilot projects involving only a few employees. In view of the positive results and increased demand from other staff to be involved, these companies are all interested in continuing the projects (Fennel 1993).

Benefits for employees

As well as providing access to qualifications for employees who have traditionally found it difficult to attend further education, 'flexible' work-based training programs present new challenges and benefits to employers. Firstly they will be able to influence what skills are to be expected of employees in each occupation in their industry, by helping to set industry standards in consultation with Industry Training Advisory Bodies. Secondly they will need to consider how performance in the workplace will be assessed. Thirdly they will need to develop an attitude which sees training as an integral part of the functions of an organisation. Fourthly they will need to consider how they will reward completion of credentials and development of competence.

Concerns

The mechanics associated with negotiating standards, assessing performance and developing positive attitudes towards training may be quite straightforward once skill requirements are identified. Problems arise, however, when there is not a clear policy on how employees will be remunerated whilst they are in training and after they have achieved a certain qualification. To avoid such problems will require a willingness on the part of unions, ITABs and employers to negotiate a strategy which will satisfy all parties. This can be done by considering the issues before each program is put in place and including agreed levels of payment into enterprise agreements. This is already happening in some companies. If companies do not value skills acquired as highly as skills used then the considerable gains obtained by accrediting workplace training will be lost.

Flexible approaches to work-based training may also increase the costs and the red tape associated with record-keeping and assessment and taking people away from their production roles. These effects may dampen the enthusiasm of employers to support flexible delivery schemes within their companies, and consequently to create barriers to its successful implementation. Some companies already have in place comprehensive systems for keeping staff training and performance appraisal systems. These can be adapted to maintain further records with little effort. A commitment between providers, unions and employer representatives to keep the whole process streamlined to avoid red tape and high costs will help keep companies on side so that they focus on the benefits of flexible delivery approaches rather than on the costs.

Learning centres

Learning centres are venues which provide or facilitate training. They can be set up workplaces, public libraries, community centres, schools and on campuses. They can also be set up as mobile units (e.g. vans, caravans). Their development has been assisted by rapid advances in communications technology, video conferencing, computer conferencing, electronic mail, fax and electronic data exchange. These have made it possible for training providers to deliver programs anywhere in the country, and for learners to access programs from the institution of their choice.

Learning centres are also equipped to provide the technology and the information learners require to access learning. They can act as brokers providing information or enrolment facilities for institutional and other providers, and can provide learners with tutorial and counselling support. They can also provide practical equipment like lathes and photocopiers. If they are to be successful they will need to show that they are cost effective and can provide access to up to date information and technology. This can be achieved in part through the setting up of regional, state and national networks to co-ordinate the sharing of information, expertise and support, and by updating equipment and training learners to use the equipment (FDWP 1993d).

What are the benefits of flexible delivery venues?

Diversifying the locations from which training can be accessed will benefit those students who are unable to attend regular on-campus training. It improves their ability to choose programs which would otherwise be denied them if they needed to attend courses, and to combine work, family, and other commitments with learning.

Teachers may achieve greater satisfaction through being able to focus more closely on the preparation of materials and the giving of feedback. In the case of work-based training, TAFE teachers and workplace trainers may benefit from improving the relevance of their programs and from networking with industry. This will allow them to find out what skills are required and to keep up to date with the changes in technology and industry needs.

The major benefits for employers is to their ability to influence the content of training and the chance to be part of a national push to 'upskill' the work-force. The customisation of materials to their needs helps to ensure that employees are not spending time on developing skills that are not required. Having employees involved in training for which they can be recognised will help to create a positive climate for further development. Highly motivated workers are also more productive. More productive workers help to improve profit margins.

What are the major concerns raised by flexible delivery venues?

Training that is not based on face-to-face contact can provide frustration for both teachers and students. This relates to home-based learning and learning accessed via learning centres more so than to work-based learning. From studies of distance education and open learning (Thorpe 1987, Willen 1981, Kelly 1987) it is evident that what home-based learners require is more tutorial contact. If tutorials are set up the question of who pays for travel and accommodation for students from remote locations will also need to be decided. If only those who can afford to go to the tutorials are able to attend, then further issues of access and equity will need to be addressed.

The task of preparing resources, maintaining records, monitoring progress and providing feedback for all on-campus and off-campus students will increase the workload for teachers. Overworked teachers may not be as committed to the task of making flexible delivery work. Providing adequate remuneration for the extra work required may help solve some of these problems. Extra support in the form of administrative help or smaller classes can also help.

Drop-out rates for students in distance education courses seems to be quite substantial (Woodley 1987, Percy, Powell and Flude 1993, Dawe 1993) the reasons given are generally domestic and work-related rather than course related. If institutions are going to spend extra amounts of money to ensure flexible training venues then they must continually evaluate whether the cost justifies the outcomes. Where there is still a

high drop out in spite of all the added resources and technological support that is provided, colleges may need to decide about who pays for the costs associated with enrolling and preparing for students who eventually drop out. They may need to seriously consider passing these costs on to the student. This would then also raise the issue of equity.

Another issues relates to the recognition of training. The question of how far courses can be customised before they cease to meet *NFROT* guidelines will also need to be answered.

Flexible entry and exit points

What are flexible entry and exit points?

Flexible entry and exit points are points during any stage of a course or program which allow students to enrol in classes and complete courses at any time. They may also be flexible course structures which allow students to leave at a variety of points but still gain some recognition of their work. This lesser qualification can then be used as a basis for entry into other programs. Flexible entry may also refer to the transfer of credits from other institutions and the recognition of prior learning. They are also closely related to a self-paced learning mode.

Why flexible entry and exit points?

In theory flexible entry and exit points make it possible for students to take less time to achieve competence if they are motivated and have the ability to do so, or take longer if they require more time and assistance to develop understanding. Adapting training to cater for individual differences in ability and competence already achieved, allows students to take advantage of casual and short term employment as it becomes available. This capacity is especially important in times of economic difficulty and high unemployment. It allows them to choose which skills they would like to develop without constraining them to programs based on the passage of time.

Flexible entry and exit points are best served by a modularised curriculum. A modularised curriculum allows students to choose from a number of options and to bail out of a program when these skills have been attained. It also allows institutions to offer training on a needs basis. An example of this is the 'Skill Supermarket' at Richmond College of TAFE. A modularised curriculum also ensures that in the event that a student is not able to complete the program and needs to take time out, any catching up necessary will take only the time required to complete the module.

General concerns

Keeping track of students' progress will be a significant task and present major problems for both teachers and administrative staff more so under this system than under traditional systems. Records will need to be up-dated so that required information can be accessed for the preparation of certificates, academic records and accounts. With students completing courses at all different times during the academic year the management of graduation ceremonies becomes an issue. Institutions may need to consider conducting quarterly graduation ceremonies so that these are manageable and allow for the greatest number of graduates to attend.

Flexible entry may have implications for the induction of students. Conducting orientation sessions on a continuous basis for one or two

students at a time would impose a large burden on teachers and support staff who are busy providing assistance to students who are already in programs. One way to avoid this problem would be either to run formal induction sessions when there are at least five students beginning programs, or have an administrative officer trained to help with the induction as soon as students enrol in courses. The first method runs the risk of never having enough students to fill an induction class and neglecting the orientation process altogether or until it is too late, and the latter runs the risk of depending on the skills of officers without backgrounds in teaching or related disciplines. These risks can be minimised by having the administrative officer become part of the multi-disciplinary course development team and participating in developing an orientation program which will be effective for students until the teacher can spend more time with the student.

In theory flexible entry and exit points allow the system to become more client focussed by adapting requirements to meet student needs. In practice systems may find that they may have to place added restrictions on students. Allowing students to come in and out of programs as it suits them may tie up places in courses. This becomes a problem when students do not complete courses but remain enrolled.

Flexible entry and exit points may also need a re-evaluation of fee structures to accommodate different rates of instruction required and to minimise any penalties that may go with leaving courses or picking up courses in mid-stream. These considerations will require effective systems for keeping records and consistent and fair judgements about the cost of courses.

Flexible entry and exit points have their financial and human costs. These costs need to be far outweighed by the benefits if the human effort required to keep abreast of enrolment and completion on demand becomes the norm.

Flexible assessment

What is flexible assessment?

Assessment is about collecting and judging evidence as a basis for awarding credentials. Flexible assessment is refers to varying when, where, how and by whom, assessment is carried out. It is consistent with a competency-based approach to learning. This includes workplace assessment, self and peer assessment, assessment on demand, computer-based assessment, and recognition of prior learning. No matter how assessment is conducted however it needs to guarantee consistency, validity and reliability. This means that the performance that is being judged as competent needs to be more than a one-off success, and actually measures the skill or personal attribute that is being targetted. Therefore the assessment process is a risk management process.

Why have flexible assessment?

A major reason for any form of assessment and awarding of credentials or qualifications is that it satisfies the public need for quality assurance. In general the public likes to see that those who have been awarded a professional or trade qualification have the competence to carry out the duties expected of them. Furthermore, employers want to maintain credibility and improve their reputations and market share by employing those who have been assessed as having achieved the necessary levels of performance as judged by an authority which is competent to assess such qualities (Eraut 1993). Varying assessment to fit in with changes in delivery gives integrity to the whole process. Furthermore recognising prior learning decreases the amount of time and cost that need to be spent on training.

What should any assessment process guarantee?

In the traditional model of assessment students in a particular year take examinations or prepare projects and assignments. These are then marked and awarded a grade to convey to what extent the student has been able to demonstrate some knowledge of program content. Such techniques may in effect have negative consequences for learning for they can influence the way students approach their learning. They may make it possible for students to pass courses with a superficial understanding of the subject matter or a lack of basic skills required (Ramsden 1992).

In competency-based training assessment is predominantly outcome-focussed. It is directly linked to demonstrated competence in performing certain skills or the evaluation of a certain product. It could be claimed that under this form of assessment there is objective evidence that basic skills have been mastered. They can be said to have been demonstrated in practice. But even in this system there is no guarantee that any deeper understanding has been developed.

According to Stevenson (1993) the mere demonstration of competence in one situation is not enough evidence to show that the individual can abstract principles which underlie classes of problems. Nor can it show a deep conceptual understanding of the problem. These can only be assumed if individuals can show they are not only able to apply this knowledge to routine problems but can also look for causes not automatically visible. Identifying and applying principles from a variety of settings to solving problems is directly linked to the demonstration of competence.

We would all like to think that the trades-person we hire can deal with all the problems we ask to be solved. The challenge for TAFE lies in producing curricula which will help aspiring electricians, plumbers and other tradespeople and professionals to develop the ability to see similarities between settings where these concepts and procedures are applicable, and assessment instruments to adequately tap this capacity. This applies to traditional forms of assessment as well as to assessment in the workplace, assessment on demand, recognition of prior learning and self and peer assessment.

Assessment in the workplace

Flexible delivery of training applied to workplace venues implies that assessment can also be carried out at the workplace. This requires the training of those who will be asked to carry out the assessment, and the willingness of managers to free personnel from production roles to allow this to happen. It will also have special implications for workers who may be able to do the work but not be able to produce verbal answers to questions asked of them either because they do not speak English or because they have other language difficulties.

One example of how assessment in the workplace can be structured to meet the needs of the institution and industry is the MBA program of the University of Glamorgan in Wales. In this model, evidence of competence is based on students meeting prescribed criteria on a consistent basis and across all situations specified by the National Vocational Qualification (NVQ) range and showing that they are able to perform to such a standard in the future in a realistic work environment. At higher levels observed performance must be accompanied by understanding.

The university has been accredited by the Business and Technology Council to offer NVQs in Management at levels 4 and 5 which have now been integrated into the MBA program. In their case study of this program (Jack, Goodman and Henry 1993) found that with the emphasis on individual, work-based and workplace assessment lecturers at the university have had to undergo a cultural change. This change concerns the way that evidence for demonstrated competence is accumulated and presented by individuals. Assessment in this program is based on students presenting answers to questions and preparing a personal report as well as providing practical demonstrations of competence.

This program is aimed at personnel who are in managerial positions or aspiring to be in managerial positions. In most cases they will have the literacy skills to be able to present evidence in the form of written or oral answers to questions and prepare a personal report. When programs are aimed at lower levels these abilities may not be as well developed. It is here that the question of valid and reliable assessment methods will be especially important. Workers who can do what is expected of them to the required standard or beyond may be limited by their inability to articulate the required answers. This may be the case even though they also may have the conceptual understanding of the problem and can identify and apply principles in a variety of settings.

If preparing for an interview or preparing a portfolio of samples of work in manufacturing plants or documentation of processes in service industries becomes too much of a hassle and requires too much time, competent workers may choose not to be involved. The system will then lose credibility and support. If all these tasks are reviewed as being to difficult managers may consider giving extra help to those who require it. They may also need to put in formal mentor programs which will help to suggest guidelines and time frames for workers to practice and achieve certain competencies. Such supporting mechanisms need to be put in place if flexible assessment processes are to be given a fair go.

Assessor training

If assessment is to be conducted at the workplace by company personnel then the question of assessor credibility becomes an issue. If assessors are not expert in the areas they are responsible for assessing, the validity and reliability of the process will be jeopardised. Expertise, however, is no guarantee of a knowledge of the various methods that are to be used to test for competence and understanding.

This may require extra training. If training is to be comprehensive it will have to produce assessors who can understand the standards that are required and identify the performance which will be expected for each of the standards. It will also have to produce assessors able to develop assessment instruments which will be reliable and valid. Training will not guarantee that subjective biases will be avoided nor will it guard against assessors favouring certain personalities and under-valuing others. Training assessors will also incur cost. This may place added burdens on tight training budgets.

Obtaining co-operation of managers

Mounting flexible assessment practices in the workplace rests on the good will of managers to allow workers, and supervisors to be involved in the process. This can be achieved by showing that improvements in morale and productivity can be a by-product of integrating training and assessment with work. Experience in British firms shows that introducing workplace assessment as a means by which workers could gain NVQ qualifications has the potential to improve motivation, morale and productivity and decrease reject rates and staff turnover (Fennell 1993, 1993a).

It is this knowledge that will create a positive climate for the introduction of workplace training and assessment as a means of obtaining qualifications. This knowledge needs to be disseminated to managers in large, and medium sized companies and small businesses not only by TAFE representatives but also by business representatives who have visited firms which have had positive results.

Assessment on demand

Assessment on demand describes the process whereby assessment is requested by individuals as soon as they feel they have achieved competence. Although this can be a manageable process in programs which are run on-campus with teachers allocated to facilitate learning and assessment as part of their everyday duties, problems can arise when assessment on demand is required at the workplace, and assessors must integrate their duties with their day to day activities. A useful lesson can be learnt from work-based assessment at 'Mansfield Knitwear' (Fennell 1993a). Here a number of candidates were allocated to one assessor at the beginning of the program. The assessors also had their own day-to-day production roles to attend to. Because workers were all at different skill levels the assessors' normal routines were being disrupted by having to respond to slower candidates. This decreased assessors' own productivity. This was not acceptable to the company and a new system of allocating candidates to assessors on a weekly basis. This was much more effective.

If assessment on demand is to be a reliable and valid way to assess competence then there must be a comprehensive system for training assessors to develop instruments and evaluate competence put in place before the program is started. In addition multiple copies of instruments need to be produced and made easily accessible to assessors so that they can respond to requests quickly and easily. Students, too, will have to be given some guidelines on how the system will work and how to evaluate their readiness for assessment.

Considerations about remuneration are especially important in a system which promotes assessment on demand. These relate to the timing of salary changes to fit in with the achievement of competence. Decisions about such matters have the potential to be controversial and may place employers and unions in a conflicting situation. One way to deal with such issues is to bring them out in the open before the program is put in place. Employers and unions could be asked to present their position on the matter and to negotiate a compromise from there. Already some companies have included clauses into the enterprise agreements to deal with questions of payment or non-payment for time spent in training (Department of Industrial Relations 1993).

Self and peer assessment

Self assessment refers to techniques used by students to judge their own level of accomplishment. It is based on the assumption that students are

in a better position to know about their own past accomplishments, and that with the appropriate tools they can provide the best indication of their present skills and abilities. Peer assessment involves candidates in the assessment of their peers. Both forms of assessment have been tried in higher education (Boud 1989) and at the work place (Mitchell and Sturton 1993) with mixed results.

Boud has written extensively on this area. His work relates to higher education. According to Boud there is some evidence to show that when 'effort' is not being included in judgements about achievement that students tend to generate marks which are fairly consistent with grades given by lecturers. Weaker students tend to overrate themselves; stronger students tend to underrate themselves. This tendency seems to be apparent when marks count towards final grades. Marks given by a student's colleagues or peers, however, tend to be just as accurate as those given by lecturers (Orpen 1982 cited in Boud).

Boud feels that with adequate training students can become less unbiased about judgements of their own work. He reminds us of why self assessment can be especially difficult for students when marks count towards final grades. Today all students, and especially those in professional classes, are very aware of their need to get high grades to successfully compete for scholarships, grants, and job interviews. A system which relies on their ability to rate themselves in an unbiased way may have serious problems with the validity and reliability of the marks awarded. Furthermore a system which relied on peer assessment would also have to guard against students collaborating against peers they did not like or promoting those they favoured. Before TAFE and other institutions go about instituting these assessment procedures much more research would need to be done.

For the purpose of workplace training some advantages may be gained by involving candidates in assessment. Mitchell and Sturton have reviewed a number of companies where self-assessment and joint partnership assessment has produced good results in terms of increased performance. Mitchell and Sturton believe that because asking companies to involve candidates in their own assessment and that of their peers may be revolutionary there needs to be a step by step approach to introducing these techniques.

Both Mitchell and Sturton and Boud believe that candidates can be involved in assessment to varying degrees. Boud believes that there needs to be balance achieved between a system which completely restricts student involvement and one which is completely trusting. Mitchell and Sturton have developed a model which can help organisations determine the extent to which candidates can be involved in assessment. This is presented below.

Figure 1: Potential types and degrees of candidate involvement in assessment

Degree of involvement

	Minimum ⟷ **Maximum**
Access to information	No access ⟵ Limited access ⟶ FulLaccess
Process decisions	No input ⟵ Confirmation of other's decision — Joint, equal responsibility ⟶ Sole responsibility
Assessment `action'	Passive ⟵ Reactive ⟶ Proactive
Judgements of competence	No input ⟵ Confirmation of other's decision — Joint, equal responsibility ⟶ Sole responsibility

Model from Mitchell & Sturton (1993)

Having a system which varies the degree of candidate involvement in assessment procedures according to the nature of the assessment being made seems to be a sensible way of addressing concerns about this form of assessment.

One of the reasons that supporters of flexible delivery have entertained self and peer assessment as viable methods for assessment is related to the costs associated with other forms of assessment. Assessment in the workplace as well as being a credible way for ascribing competence can also be time consuming. It generally involves assessors, usually supervisors, in prolonged observation of activity. This takes them away from their roles in the production process. One way to overcome this is to increase the role of candidates in their own assessment.

The recognition of prior learning: What is it?

The recognition of prior learning (RPL) is a method of giving credit for learning that a student has already obtained. It is an integral part of flexible delivery. It gives credit towards an award on the basis of evidence of learning already accomplished. This evidence can take many forms including actual products of performance and information about performance and about the individual.

Why recognise prior learning?

The importance of RPL is associated with increasing access to vocational qualifications and jobs for individuals who have considerable skill, knowledge and experience without having to do long periods of study. It can help identify training needs for institution and work-based programs.

Questions and concerns

It would be hard to question the wisdom of implementing a system which promised to award credit on the basis of demonstrated competence rather than on the basis of time spent completing training. However the collection and presentation of evidence may be difficult for some groups which are already disadvantaged. Groups with language difficulties and for whom the cost of collecting and presenting information may be prohibitive, would find the RPL system more problematic. So too would those individuals who lack the confidence to present themselves in a favourable light.

These problems are especially apparent among migrants who may not have sufficient English skills or confidence to prepare or articulate evidence in positive ways, and women who may not have the assertiveness or confidence to see their experience and knowledge as being relevant or indicative of skills that can credited towards a qualification. There may also be added problems for those who do not have access to evidence that can be verified. These groups need special assistance to identify the competence they already possess, and prepare the evidence that is required.

This can be achieved by having special sessions set aside for RPL coaching where those who have gained credit for similar skills show others what they have collected and how they have presented the evidence. This may give trainees the confidence to seek RPL credit for themselves. In addition RPL advisers can be appointed to provide information guidance and coaching on what is required, relevant, and acceptable. These RPL advisers may also require assistance from translators who will be able to provide NESB trainees with clearer interpretations of what is required in their own languages.

The assessment of RPL follows all the principles of any other form of assessment. It must be reliable, relevant and valid and must be able to transfer to new settings and situations. In addition it must evaluate the currency of RPL evidence and the ability of the individual to demonstrate the skills that have been performed in the past.

Will flexible assessment work?

There is no reason why introducing assessment techniques, which improve student access to assessment at times and locations to suit their readiness and experience (assessment on demand, workplace

assessment, RPL, self and peer assessment) should not work if administrators, teachers, employers and students are prepared to put in the time and effort to give it a chance. Problems will arise however if the system fails to recognise competence and understanding in cases where it has been achieved, gives recognition of competence where it is not deserved, or does not test for consistency of performance. If this happens then the credibility of techniques, assessors, institutions and the qualifications awarded will suffer.

To give flexible assessment procedures an opportunity to develop into effective components of routine assessment practice it will be important for staff and students to receive adequate training in the new methods. Students may also require help with the preparation of materials. Both groups need sufficient time to adjust to the new requirements. All this will require time and increased costs. If in spite of adequate preparation the practices require an inordinate amount of record keeping, bureaucratic red-tape, finances, and disruption to learning or work timetables then no matter how educationally sound they might be they will gradually fall out of favour even with the enthusiasts. The challenge for TAFE is to give flexible assessment a fair go by developing assessment processes which are streamlined, cost-effective and simple to administer. If subsequent to these precautions being taken these innovations are unable to deliver 'appraisals' which are valid and reliable then it may be necessary to revert to the more traditional methods.

Involving candidates in their own assessment may free teachers, supervisors and managers from the heavy demands competency-based assessment makes on their daily work. It may also reduce the need to employ and train assessors and reduce the costs associated with having assessors regularly called away from their roles in production. It brings with it its own costs in terms of efficiency and effectiveness. These can be quite considerable.

For students to become competent assessors of their own work and that of their peers will require extra training. This means that assessment competencies may need to be identified for each program and modules written up to deliver the competencies. A 'moderation' procedure may also need to be developed so that adjustments can be made to account for differences between assessors. All this will take teacher time and student time away from subject-centred learning activities. If there are not to be any major differences between grades given by lecturers and grades given by students it may be more efficient to keep to more traditional methods as long as they too are reliable and valid. Involving students in their own assessment excepting for routine checking off procedures, would seem to place added burdens on students. It has the potential to lead to mediocre standards of work being accepted as students generally tend to be novices in the subjects they are studying. It may also give students opportunities to be more accepting of lower standards reached in areas they are not particularly fond of. In the long run candidate involvement in assessment may be more trouble than it is worth.

Before we can make such a harsh conclusion more research using vocational education students will need to be carried out. Feasibility studies aimed at comparing candidate ratings of their own performance with those of external assessors would be a good starting point. Should findings be positive then costs associated with implementing such a program should be compared to tangible and intangible benefits. When benefits far outweigh costs then traditional techniques should give way to newer methods.

System-wide implications

Consistent standards for the recognition of training and credentials and presentation of evidence will need to be established and applied across the system if RPL is to provide valid and reliable judgments across institutions and sectors. Accreditation and verification procedures will need to be developed to maintain credibility of assessment procedures. The customisation of instruction to individual styles may also have implications for ensuring that assessment procedures do not disadvantage those who learn in certain ways.

Implementing flexible modes and venues—questions and concerns

It is generally felt that when all those who will be affected by a decision are involved in the decision making process they will have more commitment to the decision reached and are more likely to work towards their successful implementation. Implementing flexible delivery will require colleges to set up structures to allow shared decision making. The setting up of a flatter management structure to reflect the multi-disciplinary work teams required for the design and delivery of flexible programs will be essential to this. Shared decision making increases the time that work teams need to spend discussing alternatives. Too much deliberation over contentious and non-contentious unimportant issues in the quest for consensus, however, may have negative consequences. Too many meetings may take valuable time and effort away from the important task of preparing activities and giving feedback. This in turn will have consequences for staff morale.

Implementing flexible delivery will also require the setting up of buildings and facilities that can be adapted for changing learning requirements and industry and community needs. Planning for these changes will depend on accurate assessments of trends. Before institutions decide that funds will need to be spent on new buildings they would do well to work out how their existing facilities can be modified to incorporate flexible facilities (see FDWP 1993e).

The substantial costs associated with implementing flexible delivery have been alluded to throughout the paper. At a time when institutions and organisations are searching for ways to streamline services and reduce costs, the implementation of a system which has the potential to be far more expensive than traditional methods may pose a serious dilemma for directors of institutions. This dilemma can in part be tackled by collaborating with other providers to share buildings, equipment and facilities, marketing programs to overseas students, or by selling materials on the open market. A balance between collaboration and competition will need to be struck if flexible delivery is to produce results for individual institutions.

Flexible delivery should not be implemented for the sake of getting on a band-wagon. It should be embraced as a guiding philosophy after evidence of successful programs has been gathered. Flexible delivery may be able to work if it is taken one step at a time so that all the necessary supports and structures are put in place. Trying things on a small scale at first will not be too costly if things go wrong and can provide valuable information for making decisions about whether it should continue to be implemented. Sometimes a staged introduction may not indicate considerable success purely because it is a new initiative battling within a predominantly traditional system.

Whether a client-focussed system rather than a more institution-focussed system is worth the effort and cost will undoubtedly depend on whether

it is more productive in terms of student learning and access and equity considerations. So far the paper has talked about the benefits and concerns associated with self-paced learning, resource-based and technology-enhanced learning, and flexible venues and assessment procedures. There has been little discussion of whether client-focussed instruction will work better than traditional methods. It is this question that will be addressed in the remainder of the paper.

Organisation of the flexible curriculum

One of the major enterprises in any program of instruction is the organisation of the curriculum, the scheduling of activities and the development and production of support materials. For institutions wanting to move away from teacher-directed approaches towards student-centred, resource-based and technology-enhanced approaches to learning, these become especially important.

The skill requirements in industry and the community need to be assessed so that comprehensive programs can be developed to meet these requirements. Modules need to be prepared and audio visual material and telecommunications equipment need to be bought. This represents a big change in the way curriculum is developed. Skills requirements can be assessed by research teams consulting with industry and community groups. Programs can be developed by multi disciplinary work teams comprising teachers, industry representatives, technicians, librarians, instructional designers, assessment experts and other support staff. These teams can decide on curricula to be developed and materials and equipment that will be required.

A modularised curriculum

Flexible delivery hinges on the development of curricula which are divided into modular units. Such an arrangement makes it easy for students to enter and exit the training program. Such curricula can also be updated more quickly and easily than curricula arranged to extend over a whole term or year. Notwithstanding these advantages, it must also be realised that there are definite disadvantages to a modularised curricula. First, the work involved in transforming courses into modular units may initially overwhelm teachers and curriculum writers. Second, the coherence that is gained by having a more holistic treatment of the subject matter may be lost as bodies of knowledge are compartmentalised into smaller units of work. Third, there may be a failure to recognise that certain skills like communication skills, and occupational health and safety skills, cannot be taught as isolated components and need to be integrated into many units. Such frustration may create a negative climate for the adoption of flexible delivery unless support in the form of adequate resources, information and reasonable expectations is made. These problems may be overcome if module development takes place within an agreed course framework and philosophy where each contributes to a greater whole rather than being an end in itself.

Developing materials

Developing materials for a modularised curriculum can be time consuming. Administrators and course development teams need to realise that there is no need to reinvent the wheel and that existing materials can be bought to be used or adapted to suit local conditions.

What must be kept in mind however is that too much adaptation of the original program may in fact lose the focus or perspective the program had wanted to convey. Making budgets flexible enough to allow materials to be bought is one way to ensure that there is little duplication of effort. Attention can then be directed to developing resources where no suitable resources exist.

An incremental approach to the writing up of modules can be used to accumulate curriculum materials written in this format in a gradual and manageable manner. A multi campus set-up may be another way of addressing this problem by sharing the workload around a number of departments or schools. In addition colleges may want to become specialised in certain forms of programs and leave other programs to other providers. This way they can develop their expertise in specialist fields and use this as a way to market their courses nationally and internationally.

The importance of literacy skills

As well as increasing the workload on teachers, the preparation of written modules that students are expected to work through will also increase reliance on the reading and writing abilities of students. This may further disadvantage NESB students and students who have traditionally had literacy problems. Special care will need to be taken to give these students the attention and assistance required to increase their confidence in their abilities to work independently with written resources, and to improve their basic literacy skills. This can be achieved by the setting up of modules which deal with a few relatively easy to understand concepts and easy to perform basic skills. In this way students experience success early on in the piece and become comfortable with methods which are based on reading for independent work. In addition arrangements should be made for students to also attend literacy courses. This will help improve their reading and writing skills. Having students enrolled in vocational and literacy courses simultaneously adds realism to the literacy program by allowing practical application of skills being taught.

Workplace trainers may need to make arrangements for "trainees" to attend literacy courses or to have access to tapes or videos outside of work hours if they wish to keep on-the-job training devoted solely to work skills improvement. Alternatively, they may want to run the literacy courses during work hours before trainees attempt vocational courses.

Instruction in most educational institutions is based on reading. Although this is also the case in TAFE, a study of TAFE students in apprenticeship and business related courses found that it was the least preferred mode for learning (Smith and Lindner 1986). If these results can be generalised to TAFE students in other settings, then it seems that additional care must be taken to develop and use materials and methods which are not solely textually based in teaching. If reading is not the preferred mode of instruction for many students in vocational education, this raises significant questions for the implementation of flexible delivery, programs which heavily rely on reading as a learning mode.

One way to deal with this problem is to intersperse individualised instruction with group-paced instruction for the duration of the course. Another way to do it is for the instructor to introduce the module by explaining the main concepts to groups of students at the beginning of the course, leaving students to work independently in the middle stages and drawing everything together at the end of the course. This drawing together can be achieved either by having panels of students present results of their work for discussion in a 'panel' situation, to the rest of the class, having students discuss their work in groups, or give individual presentations of their work. This methodology may help to break the monotony and isolation that can come about by constant independent study. It can help to alleviate the problems of students whose preferred mode of instruction is not reading, and can give students valuable opportunities for networking with other students.

Does individualised instruction work?

Flexible delivery and training aims to develop students who are in charge of their own learning. This is to be achieved through the general but not exclusive adoption of individualised methods of instruction. One way to do this is to take account of a range of students learning styles in the preparation of course materials; another way is to promote self-paced progression through learning activities. These methods are based on the assumption that better learning outcomes will result more from self-directed methods than from teacher directed methods.

Learning styles

The customising of instruction to meet the learning preferences of students has its roots in the belief that individuals differ according to the way they go about learning and that they prefer to learn and learn best from instruction and information delivered in a manner which matches their preferred learning styles. Learning style takes account of the way individuals process information, general personality and motivational behaviours and basic physiological characteristics (Keefe 1979). It is another way of providing a client focus in vocational education. There is some evidence to show that performance improves when instruction is delivered in ways which match individual styles (Shade 1983, Salomon 1983, Riding and Buckle 1989, Riding and Saddlesmith 1983, Park 1976 cited in Entwistle and Ramsden 1983).

Cognitive style

Cognitive style refers to the way individuals go about processing information. It is a measure of the extent to which they are able to consider information independently from the environment in which it is located—field dependence/independence (Witkin et al. 1954, 1976) and the extent to which their patterns of thinking are focussed narrowly or broadly on solutions (Guilford 1956). In addition cognitive style refers to whether information is processed in a concrete logical step by step manner or in an abstract intuitive global manner (Myers 1980, Grecorc 1979, Keefe 1979) and whether learners visualise information in terms of mental pictures or in words (Riding and Saddlesmith 1992, Riding and Buckle 1989, Salomon 1981).

Two basic cognitive styles

Although there are a number of cognitive styles identified in the literature (see Hunt 1979, Lovell 1980, Misko 1994 for brief overviews) they seem to embody two basic approaches to learning—an empirical approach and a conceptual approach. It seems that those who prefer an empirical approach choose to learn using a step by step analytic concrete experience method while those who prefer a conceptual approach opt for a more global intuitive abstract method. In general the former tend to be attracted to the sciences and technological subjects while the latter tend to be attracted to the humanities (Hudson 1966, Andrews 1981, Sharde 1983, Heikkenen, 1985).

Although a knowledge of the way individuals process information can help instructors to structure learning experiences which may lead to better learning it is important for instructors and learners to be aware that not all styles may be appropriate for all situations. Those who adopt an empirical approach will profit from their close attention to logic and detail. They need however, to spend more time considering what the details mean and how they fit into the big picture. Those who adopt a more conceptual approach may have a good idea of the big picture but they will need to be made aware of the importance of having the necessary details in place. Being aware of how individuals prefer to process information can help instructors to structure materials around these preferences and help students incorporate procedural or conceptual approaches when these are lacking.

Verbalisers and imagers

Learners have also been categorised according to the way they experience information. Imagers experience mental pictures when they read, listen to or think about information and verbalisers experiencing information in words (Riding and Saddlesmith 1992, Riding and Buckle 1989). When verbalisers are asked to respond to tests using textual information verbalisers do better than when they are asked to respond to tests using pictorial information. The opposite is true for imagers (Salomon 1981).

Although knowing whether students are verbalisers or imagers can help in the development of appropriate learning materials and learning experiences it may be short sighted for instructional designers to focus on developing materials which are predominantly either visual or textual. Because we all need to be able to cope with information that is presented in both forms it would make good sense to give students practice in using both orientations rather than concentrating on one.

Personality differences

Any study of learning style cannot ignore the personality characteristics of learners for these will either predispose them to accept or reject certain types of activities. The major personality differences which affect learning styles revolve around how individuals relate to the world around them, and whether they think about what they are going to say before they speak out (Eysenck 1957, Myers 1980). Extroverts prefer the world of people and things. Introverts prefer the world of ideas (Myers 1980). Impulsives prefer spontaneity. Reflectives prefer caution (Kagan 1965 cited in Lovell 1980).

Knowledge about individuals' personality characteristics can help instructors structure activities and produce materials which will suit different personality preferences. It can also help them to advise students who tend to be impulsive of the benefits of thinking things through before committing themselves to a course of action which may be foolish, cause injury, or not provide the appropriate image. This is especially important for students preparing to work with dangerous equipment. It is also important for students preparing to work in a big

company. Here increasing use of team meetings for decisions making will require team members to project themselves in acceptable ways if they are to be considered seriously. It is imperative then that students be advised how the 'weaknesses' associated with their particular personalities can also be reflected in grades, references, and appraisals.

Physiological constraints

Learning style also incorporates differences in physiological needs. Individuals differ according to auditory, visual and physical capabilities (Dunn, Dunn and Price, 1979). They differ according to how much stress they can withstand, in how they deal with fatigue (Keefe 1979) and cope with light and temperature (Dunn, Dunn and Price 1979). Increasing age also brings with it a deterioration of certain processing capacities (Welford 1958, 1972, 1980, Kirby and Nettlebeck 1991). As the numbers of older students returning to study increases and wider differences between student ages in class groups becomes apparent there may be an increase in older students' lack of self confidence as they witness the speed with which younger students perform certain tasks. Instructors in such classes will need to recognise and understand the impact of such physiological changes in order to reduce anxieties created in adult students and to help them to adjust to changes they are experiencing (Verner and Davison 1982).

Motivational differences

Learners also differ according to their needs for achievement and for the reasons they have for pursuing a course of study. Some students are interested in getting on with their work and getting it completed on time. Other students do not have this task orientation and need to be reminded to get on with work. These students often tend to be more interested in their social environments.

It is apparent that the push for more student-centred self-paced learning will reward those students who are self motivated enough to get a job finished. It will also help those students who are assertive enough to question instructors. The problems may be felt by those who are not motivated and do not have the assertiveness skills and confidence to question instructors or to go to teachers for help. These students will then be dis-empowered by the very system which is trying to empower them. If on the other hand students are screened to identify such motivational problems at the beginning of their stay in college, and given programs which do not so much depend on their own motivation to get started and finished, but on the quality of the work that instructors set for them, then these very real problems may be avoided.

Disability, personality and motivational considerations

Student differences in physiological problems and personality and motivational characteristics should not be ignored in the building of

facilities and the drawing up of instructional activities. Suitable equipment and materials should be purchased to cater for the sight and hearing impaired and access ramps and facilities should be built for the physically impaired. Although it is important for students who prefer peer-oriented activities to be provided with opportunities to be with others and those who prefer to work alone be given individual space, it is also important that all students participate in both types of activities in order to develop a more balanced perspective.

Flexible delivery hinges on the empowerment of students for academic and vocational success. The adaptation of instructional approaches to student learning styles may provide comfortable learning environments and give students a feeling of being in control of their own destiny, but allowing them to continue to use 'styles' or techniques that have been found to be less productive than others will only serve to 'dis-empower' them.

The influence of cognitive ability on learning

So far we have focussed on the way students approach learning —learning styles—with little mention of the effect of ability on the outcome of performance. Learning style is generally regarded as purely a preference for doing things in a certain manner. This assumption falls down when the measurement of learning styles is examined more carefully. Cognitive ability tends to play a major role in the way students learn.

Cognitive ability has been found to affect learning under different conditions. High ability students do better when they have minimal assistance and do worse when there is too much explanation. The reverse is true for low ability students (Salomon 1981). These findings are relevant for vocational education and training. Traditionally greater numbers of students of lower ability have found themselves in TAFE than in universities. If Salomon is correct, then those of lower cognitive ability will be better served by more intense and explicit explanation of concepts and demonstration of skills before being sent away to work at their own pace. More able students may be able to be left to their own devices once they have attended a brief introductory session.

Cognitive ability has also been examined in relation to positive and negative feedback and intrinsic motivation (Harris, Tetrick and Tiegs, 1993). Subjects, regardless of ability, were found to perform better and to perceive themselves as competent in a task when they were given positive feedback rather than when they were given negative feedback. Low ability subjects, however, reacted more extremely to both types of feedback. Brighter students were found to do better when the task set was interesting and to do poorly when the task was boring.

Findings such as these should also be considered in the delivery of training. Although instructors may need to be careful to give all students positive reinforcement if they want performance to be successful, they need to be especially so in the case of lower ability

students. In addition they will need to ensure that tasks are interesting if they are to maintain the performance of higher ability students.

There is also evidence to suggest that cognitive style measures such as field dependence/field independence correlate with ability. High ability students tend to be field independent; low ability students tend to be field dependent (Shade 1983). These measures have also been confounded with perceptual accuracy and spatial ability (MacLeod 1986, McKenna 1984). If such cognitive style measures are really measures of ability rather than cognitive preferences then there seems to be more to be gained by focussing on differences in ability rather than on differences in learning styles.

If high achievers are also those who are able to provide their own structures, or deal with abstract concepts and ideas and process information in a logical way (Shade 1983) then it would make more sense to deliver training which develops these abilities in low achievers. Knowledge that low achievers require lots of external support, get on more with people and respond best to supportive and positive reinforcement can also be used to structure learning environments which provide these supporting mechanisms.

There seems to be evidence to suggest that certain ways of organising and releasing information will lead to better outcomes. It is these ways that need to be focussed on in a system which aims to provide equity and efficiency in the delivery of vocational education. A system which proposes to increase access to education and produce quality outcomes cannot go on teaching in ways which are congenial to only part of the population.

In reviewing the literature on learning styles and ability a picture emerges of the variety and number of variables instructors need to consider if they are to individualise instruction. The complexity of the task may in fact lead instructors and administrators to the conclusion that structuring learning activities to suit the individual learning styles of students may be more trouble than it is worth. Such considerations need to be thought through before there is a wholesale adoption of concepts which seem to make sense in theory, and have been shown to work in laboratory settings, but are more difficult to implement in practice. Moreover if it is found that these modifications make little difference to learning outcomes then instructors and administrators may baulk at the idea of implementing them.

It is imperative that more research using vocational education students is done to find out whether using learning styles as a basis for delivery of instruction will work. In addition the cost of implementing any changes will have to be weighed against the benefits envisaged before resources are committed to the production of materials and development of courses.

Self-paced versus group-paced instruction

Another way of customising instruction to suit individual students is to allow individuals to progress through modules and courses at their own pace. Before it is decided to transform the TAFE system into institutions delivering instruction based on self-paced delivery modes, it is important to find out if these methods have been successful.

As yet there are few colleges which have evaluated the effectiveness of their self-paced instruction programs, and few published research articles on the subject. Tea Tree Gully campus of Torrens Valley Institute of Vocational Education is currently undergoing an evaluation process of its flexible delivery program. The majority of relevant research articles describe studies which compare traditional and self-paced methods in elementary and secondary schools. A few studies have examined this in universities and community colleges in the United States. When results from these studies are examined there seem to be conflicting findings.

Results from studies with elementary and secondary students suggest that there is little advantage for individualised systems in performance in subject matter exams (Bangert, Kulik and Kulik 1983; Giaconia and Hedges 1982; Horak 1981) and some modest advantages in the non-achievement areas such as creativity, co-operation, critical thinking, curiosity, adjustment, and self concept (Bangert Kulik and Kulik 1983, Giaconia and Hedges 1982).

These effects are contrasted with results from studies of college students which include students from universities and community colleges. Here there seems to be evidence to suggest that when compared to conventional lecture methods, individualised programs based on mastery learning, self-pacing and modularised courses of instruction produce superior results. These results relate to exam scores, retention, and student ratings of quality, learning and enjoyment (Kulik, Kulik and Cohen 1983). These researchers claim that student exam scores can move from the 50th percentile to the 70th percentile under individualised instruction.

These findings are based on an analysis of results from a large number of studies. They seem to suggest that community college and university students may be able to deal with the extra motivational effort, discipline and cognitive skill required for independent study. University students may have already mastered general basic skills and are also learning to use complex concepts, symbols and ideas. This may better prepare them to make independent judgments about the material they are studying and able to cope with working at their own pace independently (Giaconia and Hedges 1982).

Although Kulik, Kulik and Cohen's analysis has produced dramatic effects in favour of individualised instruction, alternative explanations for superior performance cannot be ruled out. We do not know whether studies producing this dramatic average effect size matched students according to ability. This intervening variable, however, cannot be ignored. It could be that the more able students being more confident of

their abilities chose to go into the individualised programs and that superior performances claimed for such programs are really reflecting differences in student ability rather than better instruction. These questions need to be asked in the evaluation of any instructional method.

If such findings still hold up, even when student ability has been accounted for, then we may need to look at how the ability to do well under independent instruction develops in students as they move from secondary school to college. Such research would allow students to be channelled into traditional modes if they are not yet ready to accept full responsibility for independent learning, and to move across to individualised instruction arrangements when they have developed the required attitudes and abilities.

Today students successfully gaining entry to Australian universities or who may have been able to enrol in programs of their choice, have generally been able to motivate themselves to study hard and to pace their revision appropriately. The same cannot always be said of students who end up in vocational courses because they are the only courses that will accept them, those who have been sent to TAFE by CES to attend labour market schemes or those who don't really want to be in school, but are forced to be there by parents who don't want their children on the dole queue.

A student-centred approach relies heavily on the motivation of students to get work done well and on time, and on their interpersonal skills to make sure that they approach teachers or other students to get the resources and advice they require to make it on their own. This approach may, in effect, impose further barriers to access to vocational education and training for students who do not have the organisational and motivational skills to work successfully in a self-paced environment.

There is a dearth of Australian research in this area. If the individualised approach is to be promoted in TAFE, then more research needs to be done with TAFE students. Studies comparing learning outcomes in TAFE students, matched for ability, and involved in learning using either conventional or individualised methods of instruction could be carried out to answer questions related to superior instructional methods. In addition interviews of students and teachers already in programs purporting to have a 'flexible delivery' focus can be conducted to find out how the two methods are rated in practice.

Conclusion

A culture shift

Flexible delivery is a major innovation which has the potential to revolutionise the way TAFE goes about the business of providing vocational education and training. If it is to become an accepted and effective method of operating, there will have to be a culture shift from a system focussed more on the needs of the provider to one focussed more on the needs of the client. This will require consultation with industry, community and student groups to accurately identify skill requirements and expectations and to set up programs to meet these needs.

Face-to-face lock step teaching methods will increasingly give way to independent self-paced study. These arrangements will change traditional relationships between teachers, students and administrators, and support staff. They will require teachers to spend more time in preparing activities and materials, keeping records and advising and assessing students. Students will be required to organise their own time and be more responsible for their own learning. Administrators will be required to take a greater part in the advising of students and be expected to be familiar with program requirements, RPL, course changes and record maintenance. Support staff will be required to work more closely with course development teams and to take on advisory responsibilities.

A culture shift such as this needs to be approached with sensitivity and foresight. It must also be carefully planned. Staff and students need to be kept informed of impending changes and participate in those decisions which will affect the nature of their work and their relationships with others. The setting up of multi-disciplinary self-managing work teams can help to create a culture which favours increased responsibility for one's own destiny. Staff development activities can help to create a climate for the effective introduction of flexible delivery. They can be developed to help staff develop knowledge about and confidence in the new approaches. They can be developed to give them assistance in the setting up of modularised curricula and individualised programs. They can be designed to give guidance in the choice and use of appropriate technology

A client-focussed approach

Adapting services and products to meet the needs of clients is the guiding principle of the quality movement in business and industry. In TAFE, this takes the form of adapting programs and materials to suit student learning styles and preferred time and place of delivery.

Learning styles

There is some evidence to suggest that individuals generally do better in tasks which employ their preferred methods of processing information. Those who experience events in terms of frequent mental pictures do

better when presented with pictorial information and those who experience events in terms of words do better when presented with textual information. These two styles can be catered for without much difficulty through the use of learning material which makes use of images—video, diagrams, pictures, photographs—and text.

There are a number of other methods of processing information which have been identified. These generally come under the heading of cognitive styles. For our purposes, it is enough for instructors to be aware of the nature of two basic approaches and to understand that there are strengths and weaknesses associated with both approaches. There are others who learn by using an empirical approach and like to follow a logical step by step process based on concrete evidence. There are those who learn by using a conceptual approach and use a more intuitive global or holistic process based on abstract information. The former need to appreciate the importance of looking at the big picture; the latter the importance of having all the details in place. Instructors need also to be aware of how cognitive ability can impact on measured learning styles. Having staff attend workshops where learning styles are discussed is one way of preparing staff to implement flexible delivery approaches.

As well as being aware of individual methods of processing information instructors may also do well to become aware of the personality characteristics which lead to or inhibit better learning. This will help them to work with students who are extroverted and impulsive and those who tend to be introverted and reflective. Making a decision before considering the consequences or reflecting on its accuracy may lead to disastrous events, especially when working on dangerous equipment and responding to assessment questions. Spending too much time on reflection may also interfere with getting tasks completed on time.

Physical disability can also affect the quality of learning and participation in TAFE. Providing easy access to buildings and facilities, and using technology which will assist the hearing and sight impaired to better participate in training will also ensure that access to TAFE courses is provided for all.

Self-paced instruction

One of the aims of flexible delivery is to make students responsible for their own learning. This is to be done through the promotion of self-paced individualised instruction on the assumption that if students are working at their own pace, they will produce better outcomes. The evidence for this assumption is not all in. Although there are some findings to suggest that individualised programs in community colleges and universities are superior to conventional teacher directed programs, this is not the case in elementary and secondary schools. Studies comparing the two approaches with Australian TAFE students who have been matched for ability need to be carried out. In addition, evaluations of flexible delivery programs that are already up and running need to be done. Interviews with students, teachers, support staff, administrators, support staff in TAFE institutions as well as industry can help to

pinpoint successes and pitfalls and provide information for the setting up of guidelines for what to avoid or embrace in setting up flexible delivery programs.

Resource-based and technology-enhanced learning

Resource-based and technology-enhanced learning makes it possible for learning to be self-paced and accessed regardless of time and distance. If it is to be used to its best advantage, and to do what it sets out to do—make students independent and provide increased access to training—there needs to be a concerted effort to increase the literacy skills of students at risk and to train teachers and students to use the technology that is introduced. In addition, the performance of teachers may need to be evaluated using measures other than student contact hours.

Providing instruction which is resource-based requires assistance for students in using the materials that have been developed, and support for teachers to develop substantial materials. Furthermore, it is important that technology should not be used for its own sake, but because it has the ability to enhance learning. In addition, cost-benefit considerations need to be taken into account in the purchasing and updating of equipment.

Flexible delivery venues

Home-based learning

Home-based learning is generally identified with distance learning which has a long tradition in Australia and overseas. Studies of distance education or external students here and overseas, suggest that this method can, in fact, isolate learners if not enough face-to-face contact with teachers, tutors, or other students is provided. Flexible delivery approaches need to protect this contact if home-based learning is to be effective as a training mode.

Work-based training

The experience in Britain and Australia has shown that work-based training can be successfully integrated with institutional programs. It allows employers and unions to have a say in the recognition of competence. Building and sustaining their commitment to this approach will depend on the networks that are built between TAFE and industry to provide the training and the support for workplace trainers and assessors to carry out their duties. It will also depend on the extent to which the costs and bureaucracy associated with assessment, training and record keeping can be kept down.

Flexible assessment

Flexible assessment procedures include assessment on demand, and assessment conducted at the workplace, on campus or by distance methods using computer programs. They also include recognition of prior learning, involving candidates and colleagues in assessment. For these to be effective there must be a strong effort made to develop procedures which assess successful performance on tasks and which can

predict that this will be indicative of performance in related tasks. This will be especially important in the assessment of the currency of RPL evidence. The training of workplace assessors who are also expert in their fields will need to include skills in the development of assessment procedures which provide objective and reliable information.

Special consideration will have to be made for the assessment of performance and recognition of prior learning of those with English language difficulties and those who lack the confidence required to present evidence which supports claims of prior learning. Special mentor programs can be put in place to help these students achieve success. If the whole system becomes too unwieldy, and too costly for colleges, employers and students then it may fail to take hold as a credible alternative method for assessing performance, and the more traditional and less costly methods may be brought back. The challenge for TAFE is to give the new methods a fair go before making a decision.

Flexible entry and exit points

Flexible delivery makes it possible for students to start, finish and defer courses according to their abilities and changes in personal and economic circumstances. It allows for transfer and recognition of prior learning. It facilitates the marketing of courses on an individual module basis. Flexible entry and exit points will have special implications for the induction and counselling of students, the maintenance of academic records, the setting of suitable fee structures, and the scheduling of graduation ceremonies. It will also have implications for the design of curriculum. Once again the commitment of instructors and administrators needs to be sustained to continue to offer this flexibility. It will wane if special resources, support and training are not made available.

Disadvantaged groups

Flexible delivery aims to increase participation in TAFE by removing existing barriers to learning. It seeks to do this by instituting a delivery system which is student-centred rather than teacher-centred, and establishing buildings, facilities and programs to meet the needs of students. Flexible delivery shifts the onus of responsibility for learning onto the student in the hope that this responsibility will empower students to be active participants in their education.

Taking responsibility for one's own learning will be easier for those students who are academically able and motivated. It will also be easier for those who have the organisational skills to get things done on time, and those with the interpersonal skills and confidence to ask for and obtain the required assistance from teachers. It will be more difficult for those who lack the time management skills to meet deadlines, or the motivational skills to get started. If it is not accompanied by increased learning support and frequent interaction with teachers and support staff flexible delivery may serve to further dis-empower students.

Flexible delivery may present added problems for students who have literacy problems and language difficulties. This will be more evident in those programs which are developed to reflect the literacy level expected in a particular workforce. If students do not possess these skills then questions about their suitability for the program will need to be asked. These questions may have implications for selection procedures, and for remedial activities.

Concluding remarks

It is still too early to make any definitive statements about the viability of flexible delivery. Much more time needs to be given to assessing the results of those programs that have already implemented the program in the way that was intended. There is no doubt however that successful implementation will require the commitment of local college directors to make funds available to support these programs. It will also require changes to administrative and other organisational systems which may impede its implementation.

Introducing flexible delivery will be costly. There will be costs associated with the purchase of new technology to facilitate learning and to maintain administrative records and functions. There will be costs associated with the production of extra materials. There will be costs associated with the training of new and existing teaching, support and technical staff. There will be costs associated with the setting up of suitable facilities and the storage and maintenance of equipment. If budgetting for these costs is not based on accurate forecasting of training needs in industry and in the community, colleges may run the risk of wasting resources on initiatives that cannot be justified in economic or educational terms.

Flexible delivery will increase workloads for teachers. Developing curricula, producing materials, keeping up with on-campus and off-campus student progress, giving feedback, and maintaining records will all take time. If teachers are not recognised, supported and rewarded in some way for this increased work load, their motivation to support flexible delivery may wane. This may lead them either to look elsewhere for less stressful forms of employment, or to diminish their commitment to making flexible delivery work.

Under flexible delivery traditional relationships between teachers and students will change. As students take charge of their own learning teachers may experience a sense of loss of control. As a result they may also relinquish responsibility for what happens in student learning. When this happens students will cease to benefit from instruction given by teachers who have had the time to develop relevant expertise.

The evaluation of performance of all staff including college directors will also need to take account of changed work roles. If performance indicators continue to be based on student contact-hours or other inappropriate measures there will be few incentives for everyone to give flexible delivery a fair go.

The success of flexible delivery hinges on the availability and accessibility of materials which cater for client needs. If suitable materials are not available at times which suit individual clients then the credibility of the system will suffer. If long delays are associated with accessing materials, and if materials can only be borrowed for short periods of time, students will be more constrained than empowered under flexible delivery.

Flexible delivery has been identified as one way to maintain market share in an open vocational education market. In the long run its survival will depend on its ability to deliver better learning without increasing costs and red tape to any great extent. It will also depend on how well it can ensure that it does not further dis-empower disadvantaged groups by the very methods that are meant to empower them. This is the challenge.

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